| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/053,072 | 10/26/2001 | Thomas M. Cronin | 10559/581001/P11135 | 5812 |

20985          7590          10/03/2005

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| EXAMINER |
|---|
| GUILL, RUSSELL L |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2123 | |

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on _26 October 2001_.

2a)☒ This action is **FINAL**.     2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☐ Claim(s) _____ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-30_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _08 October 2002_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

## DETAILED ACTION

1.    This action is in response to an Amendment filed on July 7, 2005. Claims 1 – 3, 6, 11 – 13, 16 – 17, and

21 – 30 were amended. No claims were cancelled. Claims 1 – 30 have been examined. Claims 1 – 30 have

been rejected.


### Response to Arguments

2.    Regarding claims 8, 18, and 28 that were rejected under 35 U.S.C. 112, first paragraph, the Examiner

finds the Applicant's arguments persuasive, and the rejection is withdrawn.

3.    Regarding claims 1, 6, 11, 16 – 17 and 21 that were rejected under 35 U.S.C. 112, second paragraph,

the Applicant's amendments corrected the issues, and the rejection is withdrawn.

4.    Regarding claims 1 – 4, 7 – 8, 11 – 14, 17 – 18, 21 – 24 and 27 – 28 that were rejected under 35 U.S.C.

012(b) as being anticipated by Cohen (U.S. Patent No. 6,014,151):

   a.   The Applicant's arguments were considered but are moot in view of new grounds of

   rejection necessitated by Applicant's amendments.

   b.   Applicant argues that Cohen does not teach that the results of Cohen's process are to be

   displayed or rendered, and further, that rendering cannot be inferred from the teachings of

   Cohen. The Examiner respectfully disagrees. Cohen teaches that the invention characterizes a

   particle that can be emitted in a particle emitter **in a computer animation (column 3, lines 38 –**

   **42)**. Cohen also teaches that the invention relates to improvements in computer graphics

   animation **(column 1, lines 5 – 9)**. Further, Cohen teaches that the invention is implemented

   using one or more computer programs which are represented by a window displayed on a

   monitor **(column 2, lines 65 – 67, and column 3, lines 1 – 2; and figure 1, element 102)**. From the

   foregoing teachings, it would have been obvious that Cohen's results are displayed or rendered.

   Accordingly, the rejection is maintained.

   c.   Applicant argues that the invention requires a client-server system, and has amended the

   claims accordingly. The new claim limitation of a client-server system is addressed by new art in

   the claim rejections below.

5.    Regarding claims 6 and 16 that were rejected under 35 U.S.C. 103 (a) as being unpatentable over

Cohen in view of Tolson (U.S. Patent 5,500,925):

   a.   Applicant argues that Tolson does not teach or suggest a system having a particle control

   path, and there is no motivation to combine the teachings of Tolson with the teaching of Cohen

   with respect to determining a distance between the particle and a closest point on the particle

   control path. The Examiner respectfully disagrees. Tolson teaches a line segment with a force on

a particle that radiates from the line segment (column 7, lines 14 - 30). Tolson's line segment is

functionally equivalent to a particle control path. Tolson also teaches a line force that would be

oriented perpendicular to the line and inversely proportional to the square of the distance from

the line, which determines a distance between a particle and the closest point on the line (column

7, lines 14 - 30). The motivation to use these teachings of Tolson would have been the

desirability of providing the image processing effects recited in Tolson (column 1, lines 28 - 30),

and provided by way of the line segment with a force field. Accordingly, the rejection is

maintained.

*Claim Rejections - 35 USC § 103*

6.    The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections

set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as
> set forth in section 102 of this title, if the differences between the subject matter sought to be
> patented and the prior art are such that the subject matter as a whole would have been obvious at
> the time the invention was made to a person having ordinary skill in the art to which said subject
> matter pertains. Patentability shall not be negatived by the manner in which the invention was
> made.

7.    Claims 1 - 4, 7, 11 - 14, 17, 21 - 24 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Cohen (U.S. Patent 6,014,151), in view of Merrick (U.S. Patent Publication 2002/0097244).

    a.    **Regarding claims 1, 11 and 21:**

        i.    Cohen appears to teach:

        (1)  Receiving a definition of a particle control path (figure 3, item 301; and

column 5, lines 26 - 30);

        (2)  Modifying at least one attribute of a particle based on a distance between the

particle and the particle control path (figure 3, item 311; and column 5, lines 40 -

42);

        (3)  rendering the particles (column 3, lines 38 - 43; and column 1, lines 5 - 10).

        (4)  **Regarding claim 11:**

          (a)    A machine readable medium that stores machine executable

instructions (figure 1, and column 2, lines 49 - 67; and column 3, lines 1

- 20).

        (5)  **Regarding claim 21:**

        (b)      A memory that stores executable instructions, and a processor that executes the instructions (<u>figure 1; and column 2, lines 49 - 67; and column 3, lines 1 - 20</u>).

ii.     Cohen does not specifically teach:

(1) Receiving, <u>by a client</u>, a definition of a particle control path <u>from a server;</u>

(2) Modifying, <u>by the client</u>, at least one attribute of a particle based on a distance between the particle and the particle control path; and

(3) rendering the particles <u>on a client display device</u>.

iii.    Merrick appears to teach:

**(1)** Receiving, **by a client**, a definition of an animated character path <u>from a server</u> (<u>paragraphs [0003], [0060] and [0061]</u>).

**(2)** rendering the animated character <u>on a client display device</u> (<u>paragraphs [0003], [0060] and [0061]</u>).

iv.    Cohen and Merrick are analogous art because they are both directed to the art of automatically generating computer graphics animation.

v.     The motivation to use the art of Merrick with the art of Cohen would have been the benefit recited in Merrick that the system generates dynamic animation that can be used in a narrow-band environment such as the internet without the need to delete content or compromise quality (<u>paragraphs [0017] and [0018]</u>).

vi.    Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Merrick with the art of Cohen to produce the claimed invention.

b.  **Regarding claims 2, 12 and 22:**

i.     Cohen appears to teach:

(1) receiving particle attribute information (<u>column 3, lines 37 - 47; it would have been obvious that characterizing a particle by parameters is inherently receiving particle attribute information</u>); and

(2) generating a set of attributes based on the particle attribute information (<u>column 4, lines 65 - 67; and column 5, lines 1 - 6; it would have been obvious that the initial speed and direction of the particle are particle attributes, and the trajectory of the particle is generating new particle attributes based on the original particle attribute information</u>).

ii.    Cohen does not specifically teach:

> (1) Generating, **by the client,** a set of attributes based on the particle attribute information.

    iii.    Merrick appears to teach:

> (1) Generating, by a client, a set of attributes for an animated character (**paragraphs [0003], [0060] and [0061]**).

c.  **Regarding claims 3, 13 and 23:**

    i.    Cohen appears to teach:

> (1) receiving coordinates for a set of points that are continuously connected using a mathematical construct (**column 4, lines 20 – 30; it would have been obvious that defining a particle path using B-splines is receiving coordinates for a set of points that are continuously connected using a mathematical construct**); and

> (2) receiving a control algorithm corresponding to the particle path (**column 4, lines 29 – 36; it would have been obvious that path parameters that control the force that affect particles is a control algorithm corresponding to the particle path**).

    ii.    Cohen does not specifically teach:

> (1) Receiving, **from the server,** coordinates for a set of points that are continuously connected using a mathematical construct;

> (2) Receiving, **from the server,** a control algorithm corresponding to the particle path

    iii.    Merrick appears to teach:

> (1) Receiving, **from the server,** a control command (**paragraphs [0003], [0059], [0060] and [0061]**)

d.  **Regarding claims 4, 14 and 24:**

    i.    Cohen appears to teach:

> (1) That the mathematical construct comprises a spline curve (**column 4, lines 20 – 30**);

e.  **Regarding claims 7, 17 and 27:**

    i.    Cohen appears to teach:

> (1) A control algorithm is defined to change at least one of a position attribute, a color attribute and a size attribute of the particle during an up-date cycle (**column 4, lines 65 – 68; and column 5, lines 1 – 6; it would have been obvious**

that since the particle is following a trajectory through time, that the particle

position attribute is changed during each update cycle);

f.   Regarding claims 8, 18 and 28:

i.   Cohen appears to teach:

(1)  determining an occurrence of the up-date cycle according to one of a

particle's age, position, color and size (column 5, lines 6 – 28; and column 5,

lines 1 – 6; it would have been obvious that since the particle is updated by a

path percentage, that the particle position attribute determines each update

cycle);

8.   Claims 5, 15 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen in view of

Merrick as applied to claims 1 - 4, 7, 11 - 14, 17, 21 – 24 and 27above, and further in view of Foley (Foley,

James D.; van Dam, Andries; Feiner, Steven K.; John, F.; Computer Graphics: Principles and Practice,

1996, Addison-Wesley).

a.   Cohen as modified by Merrick teaches method of modeling a particle system composed of

particles having attributes, as recited in claims 1 - 4, 7, 11 - 14, 17, 21 – 24 and 27 above.

b.   Regarding claims 5, 15 and 25:

i.   Cohen appears to teach:

(1)  Using a spline curve (column 4, lines 20 – 29).

ii.   Cohen does not specifically teach:

(1)  The spline curve comprises a Catmull-Rom spline curve.

iii.   Foley appears to teach:

(1)  a Catmull-Rom spline curve (pages 504 – 505, section 11.2.6)

iv.   Foley and Cohen are analogous art because they are both directed to the same

problem area, that of computer graphics.

v.   The motivation to use the art of Foley with the art of Cohen and Merrick would

have been the desirability expressed in Cohen for a path that particles interact with

(column 1, lines 35 – 42), and the use of splines to define the path (column 4, lines 20 –

29), and the usefulness recited in Foley of Catmull-Rom splines to define a path in 3D

space that follows a series of points of a curve (pages 504 – 505, section 11.2.6, first

paragraph).

vi.        Therefore, as discussed above, it would have been obvious to the ordinary

artisan at the time of invention to use the art of Foley with the art of Cohen and Merrick

to produce the claimed invention.

9.    Claims 6, 9, 10, 16, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen in

view of Merrick further in view of Foley as applied to claims 5, 15 and 25 above, and further in view of

Tolson (U.S. Patent 5,500,925).

    a.    Cohen as modified by Merrick teaches method of modeling a particle system composed of

particles having attributes, and using a Catmull-Rom spline curve, as recited in claims 5, 15 and

25 above.

    b.    **Regarding claims 6 and 16:**

        i.        Cohen does not specifically teach:

        (1)  determining a distance between the particle and a closest point on the

particle control path;  and

        (2)  determining an amount of change to the particle attribute based on the

distance.

        ii.        Tolson appears to teach:

        (1)  determining a distance between the particle and a closest point on the

particle control path (<u>figure 7; and column 7, lines 14 – 29; it would have been

obvious that the line force isdetermined by a perpendicular line from a

particle to the line, which is the closest point on the line</u>);

        (2)  determining an amount of change to the particle attribute based on the

distance (<u>column 3, lines 30 – 45; and figure 7; and column 7, lines 14 – 29; it

would have been obvious that since the particles react to forces in a

predictable fashion, obeying the laws of physics, and since the force is

determined by the distance to the line, that an amount of change is to a particle

attribute (e.g. position) is determined by the distance to the line</u>).

        iii.        Tolson and Cohen are analogous art because they are directed to the same

problem area, that of computer graphics animation.

        iv.        The motivation to use the art of Tolson with the art of Cohen and Merrick would

have been the desirability of providing image processing effects recited in Tolson

(<u>column 1, lines 28 – 32</u>), and the solution methods provided in Tolson.

     v.      Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Tolson with the art of Cohen and Merrick to produce the claimed invention.

c.  **Regarding claims 9 and 19:**

     i.     Cohen appears to teach:

     (1) modifying the particle attribute an amount that varies based on the distance (<u>Abstract, lines 5 – 8</u>);

d.  **Regarding claims 10 and 20:**

     i.     Cohen appears to teach:

     (1) the particle system is a three-dimensional particle system and the particles are defined by three-dimensional coordinates (<u>Abstract, lines 2 – 6</u>);

10.  Claims 26, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen in view of Merrick further in view of Foley as applied to claims 5, 15 and 25 above, and further in view of Tolson.

  a.  Cohen as modified by Merrick and Foley teaches method of modeling a particle system composed of particles having attributes, and using a Catmull-Rom spline curve, as recited in claims 5, 15 and 25 above.

  b.  **Regarding claim 26:**

     i.     Cohen does not specifically teach:

     (1) determine a distance between the particle and a closest point on the particle control path; and

     (2) determine an amount of change to the particle attribute based on the distance.

     ii.    Tolson appears to teach:

     (1) determining a distance between the particle and a closest point on the particle control path (<u>figure 7; and column 7, lines 14 – 29; it would have been obvious that the line force isdetermined by a perpendicular line from a particle to the line, which is the closest point on the line</u>);

     (2) determining an amount of change to the particle attribute based on the distance (<u>column 3, lines 30 – 45; and figure 7; and column 7, lines 14 – 29; it would have been obvious that since the particles react to forces in a predictable fashion, obeying the laws of physics, and since the force is</u>

> <u>determined by the distance to the line, that an amount of change is to a particle</u>
> <u>attribute (e.g. position) is determined by the distance to the line</u>).

iii.     Tolson and Cohen are analogous art because they are directed to the same
problem area, that of computer graphics animation.

iv.     The motivation to use the art of Tolson with the art of Cohen, Merrick and Foley
would have been the desirability of providing image processing effects recited in Tolson
(<u>column 1, lines 28 - 32</u>), and the solution methods provided in Tolson.

v.     Therefore, as discussed above, it would have been obvious to the ordinary
artisan at the time of invention to use the art of Tolson with the art of Cohen, Merrick and
Foley to produce the claimed invention.


c.   **Regarding claim 29:**

i.     Cohen appears to teach:

(1)  modifying the particle attribute an amount that varies based on the distance
(<u>Abstract, lines 5 - 8</u>).


d.   **Regarding claim 30:**

i.     Cohen appears to teach:

(1)  the particle system is a three-dimensional particle system and the particles
are defined by three-dimensional coordinates (<u>Abstract, lines 2 - 6</u>).


*Conclusion*

11.  Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.
Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the
extension of time policy as set forth in 37 CFR 1.136(a).

12.  A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the
mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of
this final action and the advisory action is not mailed until after the end of the THREE-MONTH
shortened statutory period, then the shortened statutory period will expire on the date the advisory
action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing

date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX

MONTHS from the date of this final action.


13. Examiner's Note: Examiner has cited particular columns and line numbers in the references applied

to the claims above for the convenience of the applicant. Although the specified citations are

representative of the teachings of the art and are applied to specific limitations within the individual

claim, other passages and figures may apply as well. It is respectfully requested from the applicant in

preparing responses, to fully consider the references in their entirety as potentially teaching all or part of

the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the

Examiner.

14. The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure:


    a.   Brinsmead (U.S. Patent No. 6,348,924)


15. Any inquiry concerning this communication or earlier communications from the examiner should be

directed to Russell L. Guill whose telephone number is 571-272-7955. The examiner can normally be

reached on Monday – Friday 9:00 AM – 5:30 PM.

16. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo

Picard can be reached on 571-272-3749. The fax phone number for the organization where this

application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature or relating to the

status of this application should be directed to the TC2100 Group Receptionist: 571-272-2100.

17. Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be obtained

from either Private PAIR or Public PAIR. Status information for unpublished applications is available

through Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Russ Guill
Examiner
Art Unit 2123

Paul L. Rodriguez   9/29/05
Primary Examiner
Art Unit 2125

RG